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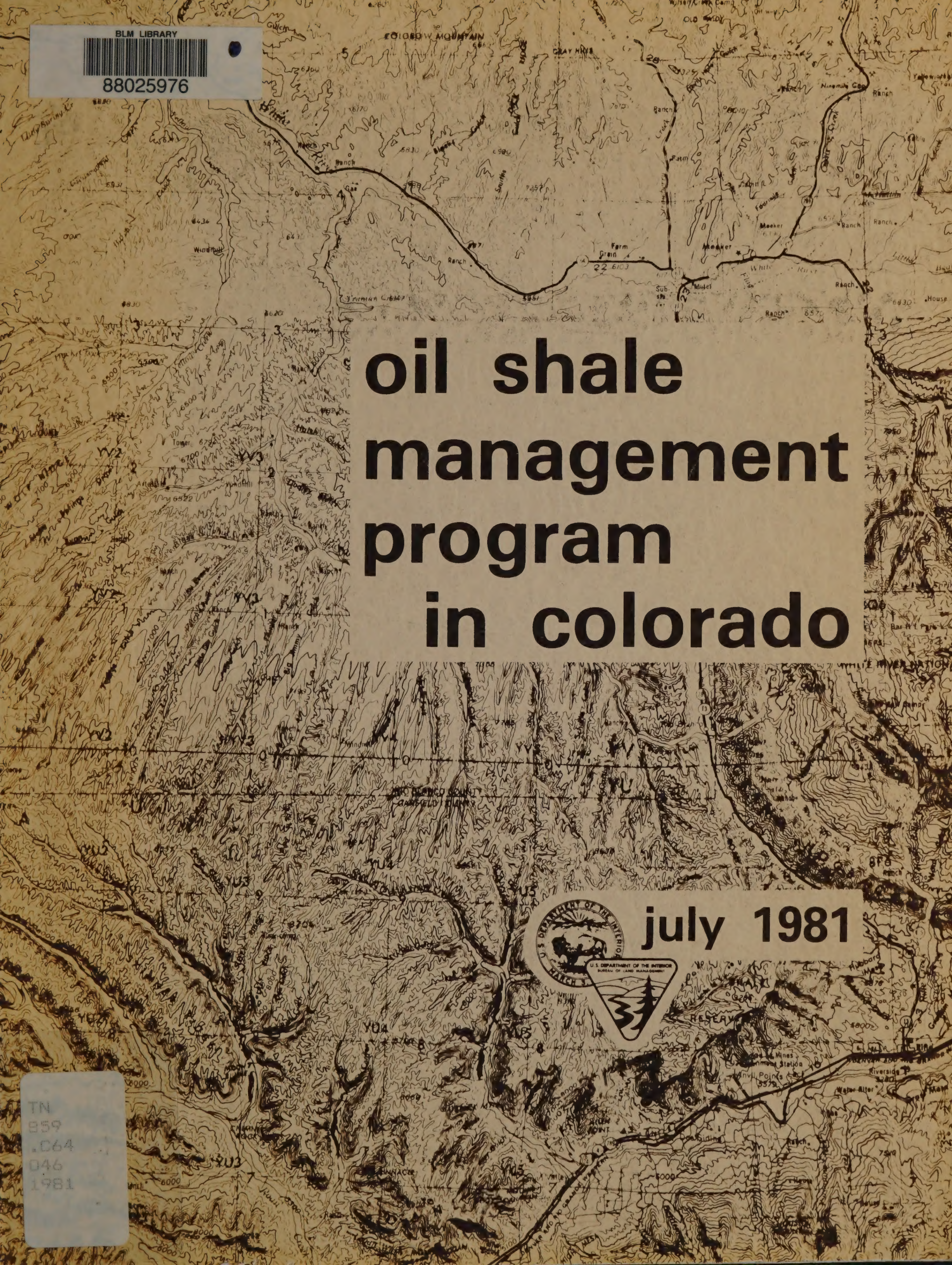

oil shale management program in colorado

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EXECUTIVE SUMMARY

Oil Shale Management Program in Colorado

To develop and implement a comprehensive oil shale management program in Colorado it must be immediately responsive to the requirements of private industry while decisions on the Bureau's land must be timely and in a multiple-use framework. In addition, policies and goals of state and local governments must be considered in all decisions. It would seem appropriate that decisions should be based upon total production levels of both private and Federal resources, on line capability, growth patterns, etc., that are reasonably constant and consistent, rather than pre-selected time periods. In addition, the question should be asked: When and how much Federal leasing is best for Piceance Basin and surrounding communities?

The following scenerio is presented as a means of meeting the requirements of both Federal and private industry in managing the oil shale program in Colorado. In addition, it assures a full partnership with industry, and state and local governments. And finally, it meets these goals by utilizing present Bureau decision making systems.

PHASE I -

Part A: Would be to complete the prototype oil shale leasing program in Colorado. Its primary purpose would be to lease one or two tracts for technical enhancement of multi-mineral operations.

It would be accomplished by:

- Call upon industry for indication of interest in those tracts considered in the prototype environmental impact statement published in 1973 and the 1975 land use plan for the White River Resource Area.

This would be initiated immediately.

Part B: Would be to meet the immediate requirements for private industry.

It would be accomplished by:

Call upon industry to provide the Bureau with its firm site specific needs for the use of public lands directly related to its development of privately-owned oil shale in Colorado (rights-of-way for pipelines, roads, reservoirs, transmission lines, exchange proposals, etc.).

Part A and B would be accomplished simultaneously and would begin immediately. They would be brought to decision by:

> Preparation of a regional environmental impact statement for an area of northwest Colorado based on the results of the above to consider the site specific impacts of the proposals and to update the prototype environmental statement as necessary.

The EIS would assure that both requirements (Part A and B) would be analyzed in a comprehensive region-wide study. It would allow the state and local goverments and other groups to actively participate in the process in addition to allowing private development to become fully integrated into the Colorado Joint Review Process.

Phase II - Development of a long-term Federal oil shale program would be to initiate and complete a programmatic EIS for the management of oil shale in the United States. It would address: how the program should be designed; should a program be adopted by the Department; and what are the impacts, if any; and, policy and the regulations to manage the program.

Phase III- Implementation of a Long-Term Federal Oil Shale Program

Part A: Initiate and complete a land use plan(s) for the area involving the permanent oil shale program and related issues, both Federal and private. The State of Colorado and local governments and industry would be an integral part of this plan in addition to the regional oil shale team.

The decisions from the plan would allow for major Federal leasing to directly occur and the issuance of appropriate rights-of-way, exchanges and other land use authorization for private development of ancillary facilities on Bureau lands. The exact method chosen would depend upon timing of the decision (see options on page 12).

The plan could be initiated once a decision is made by the Department to have a permanent oil shale program. It must be carefully orchestrated so that decisions made in the EIS programmactic (Phase II) are not made, or even implied, during the preparation of this land use plan.

Part B: Develop and implement a monitoring and evaluation process for the oil shale program.

In summary, we have the capability to manage the oil shale program through existing management processes and procedures.

The scenerio outlined is responsive and flexible to the needs and requirements of the industry and fully integrates the concerns and requirements of the State of Colorado, local government, interested groups, and the regional oil shale team.

We have these capabilities operating and are ready to initiate an oil shale program.

OIL SHALE RESOURCE DEVELOPMENT

OIL SHALE RESOURCE DEVELOPMENT

Oil Shale Resource Development

I. Introduction

A. Industry

1. An awareness of the level of activities relating to oil shale development must be maintained, particularly projects on privately-owned oil shale. All decisions on federal activities must take into consideration the magnitude and intensity of current and planned private developments. There are six projects in various stages of development, from planning to under construction (see II. A.) by the following companies: Colony Development Operation (TOSCO Corporation and Exxon Company, U.S.A.), Union Oil Company, Superior Oil Company, Occidental Oil Company Incorporated (Logan Wash area), Chevron Oil Shale Company (two separate projects) and Mobil Oil Company. There are on file 29 mineral patent applications involving 422 pre-1920 mining claims embracing almost 65,000 acres of land in the Piceance Creek Basin area of northwest Colorado. In addition, over 190,000 acres are embraced in mining claims which may ripen into patent applications after the appeals to the U. S. District Court in Colorado are settled.

B. State and Local Governments

1. State of Colorado Position on Oil Shale Development. The State of Colorado supports the preparation of a permanent leasing program, an Interior evaluation of the current status of the prototype program, a speedup in the BLM planning schedule to include preparation of a Resource Management Plan (RMP) and regional development plan for the oil shale region for the Piceance Basin, the issuing of one multi-mineral lease, and Congressional action to make off-tract lands available to current oil shale lessees as needed. The following are the State of Colorado's detailed position statements:

a. Multi-Mineral Leasing. It would be highly desirable for Interior to offer to lease lands for multi-mineral development. Multi-mineral technologies are significantly different from the technologies currently being developed on Federal lease tracts Ca and Cb, and private lands. No private lands are readily available for testing this technology.

b. A Comprehensive Plan For The Oil Shale Region. Specific decisions about the management of federal lands, including possible future leasing under a permanent leasing program, must be based on a comprehensive plan for managing the multiple resources of the oil shale program. Therefore, BLM should prepare such a plan, including a RMP for the Piceance Basin. Built into the RMP process should be a formal mechanism for intensive state and local involvement and for coordination between the activities of the state and local governments, BLM, and other federal agencies. The plan must address the full range of oil shale development, including actions on private land, and give special attention to management of socio-economic impacts.

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c. Evaluation Of The Prototype Leasing Program. In preparation for designing a permanent leasing program, an "interim report" should be prepared summarizing data obtained from the prototype program, evaluating the prototype program and laying a basis for a comprehensive evaluation of the program at a later date.

d. Permanent Leasing Program. The Department of Interior should prepare for the future by designing a permanent oil shale leasing program. This would not commit the Department to implementing the program, but it would enable the Department to act more quickly if it was decided in the future that leasing was appropriate.

The state is an active member of the Regional Oil Shale Team and strongly supports close federal-state-local cooperation using this and other mechanisms.

e. Off-Tract Leases. The state supports Congressional action to make off-tract lands available to current lessees for disposal of spent shale and other activities (not including mining).

2. Colorado's Joint Review Process

a. Background

In recent years there has been a proliferation of environmental and land use laws, regulations, permits and other governmental reviews. Local, state and federal agencies conducted their project reviews independently, often duplicating efforts and, at times, working at cross purposes.

In September 1978, the U. S. Department of Energy awarded the Colorado Department of Natural Resources a grant in the development of a Joint Review Process (JRP) for major energy developments.

b. Purpose and Function

The JRP is a management system designed to coordinate regulatory and administrative reviews conducted by all levels of government, thus streamlining the procedure for development of energy projects.

(1) Is a voluntary process and cannot be imposed upon a project proponent, federal, state, or local government participant.

(2) Coordinates the review and decisionmaking process between all levels of government.

(3) Provides a forum in which government, industry and the the public can discuss issues and concerns through cooperation and compromise.

c. Implications For Oil Shale

The JRP is presently a project-oriented program. The primary focus of the JRP is to coordinate a variety of site specific regulatory and permitting programs for a specific project.

In discussions with the state, they see absolutely nothing to prevent a series of projects being undertaken cumulatively in the JRP.

Our comprehensive plan might become one component in the JRP. This would include ROWs, etc., initiated by development on private lands.

3. Local Government Position on Oil Shale Development.

a. Rio Blanco County. The following policy positions were articulated by Glenn Payne, Director of Planning, on June 17, 1981:

(1) The county commissioners realize that there will be additional oil shale development. The commissioners would support a moderately-paced oil shale leasing program.

(2) Environmental Impact Statements (EISs).

(a) EISs do not adequately address social economic impacts.

(b) Future EISs on oil shale must identify social economic impacts and then focus on mitigating identified impacts.

(3) Front-end problem. The county has a good working relationship with the BLM Craig District Office. However, local, state, and federal agencies, along with private industry, must develop a process for dealing with the boom-town aspects of oil shale development prior to the implementation of a leasing program.

b. Colorado West Area Council of Governments (COG). The COG Board has either adopted the following positions as resolutions or expressed them in comments officially submitted in response to EISs. These statements were conveyed to the BLM on June 17 and 18 by John Johnson, Acting Executive Director of the Colorado West Area COG, and Mike Siegel, COG Energy Impact and Housing Specialist.

(1) The COG would accept a 500,000 barrel/day oil shale industry provided it was phased in over a period of time.

(2) Mitigating measures for social economic impacts must be identified in an oil shale EIS. Those identified measures must then be anticipated in the committed mitigation section of the EIS and subsequently included in the oil shale leases.

(3) Land exchanges. The COG Board is opposed to land exchanges unless the exchanges reflect the true resource value of

the land. Any land exchange must result in an equal payment to the oil shale trust fund as would occur if the tract was disposed through a direct lease situation.

(4) The COG supports a requirement that industry be required to employ best available pollution control technology. The COG would oppose the lowering of current air and water quality and land reclamation standards.

(5) The Board favors the development of a RMP for the White River Resource Area based on a cumulative energy development scenarios (coal, oil, oil shale, natural gas, uranium, dawsonite, and nacholite) in light of maintaining a viable agricultural economic base in the region.

(6) All leases should require compliance with local ordinances, laws and regulations.

(7) The region and state must be included as an active participant in developing and implementing oil shale leasing policies and programs.

C. Background Information on the Feelings of Local Western Communities on the Development of Oil Shale

This summary of local community and county government attitude regarding the oil shale development is based on general attitudes gained from discussions, scoping activities, day-to-day contacts, newspapers, TV, radio, etc.

1. The town of Meeker has the "wait and see" philosophy on oil shale development because there was much anticipation for development, which did not occur. The town is adverse to large expansion because they want to keep a small-town image.

2. Both Rifle and Rangely are receptive to oil shale development at the present time. Their attitudes could change if population influx becomes too great, particularly in Rifle. This could happen with the development of coal from Moon Lake Deseret Mine in Rangely and the oil shale development. The population might double and their present social services facilities would be inadequate, and need for expansion of facilities would become imminent.

Rifle is also growing rapidly because of the oil shale program, and more new towns and communities, such as Battlement Mesa, are developing. The attitude of the local planners is the opposing of developing new oil shale tracts outside the city limits of these new towns, to control growth.

3. However, the majority of the impacts is in the Grand Junction area. The following attitude covers the entire Grand Junction district.

They are willing to have oil shale related development occur, but they want it to be orderly, well-planned, phased, and coordinated with local governments. They want local government input into decisions affecting them and sufficient front-end resources committed by the energy companies involved to ensure that they pay their own way.

D. Environmental Community

The Colorado Open Space Council and Sierra Club, National Wildlife Federation attitudes are well known.

These organizations know they cannot stop oil shale development and they know it will happen. They want an orderly, well-planned development to occur. They will insist on keeping the air and water quality levels at safe standards, that social and economic growth are controlled and that the development of oil shale will not destroy the small-town community atmosphere of the areas.

Friends of the Earth opposes further leasing because there is adequate fee land available for first generation plants.

E. Federal Programs

1. Oil Shale Leases (prototype)

a. Tract Ca, 5,089.7 acres in size, is leased to Rio Blanco Oil Shale Company (Gulf Oil Corporation and Standard Oil Company of Indiana). Reserves are estimated to be nine-billion-barrels depending on extraction methods used. A demonstration burn of a modified in-situ retort was recently completed and confirmed an estimated recovery of 1,000 to 2,000 barrels. Open pit mining, combined with Lurgi surface retorts, will be demonstrated in addition to the modified in-situ process. Eventual production is targeted at 94,000 bbls/day.

b. Tract Cb, 5,093.9 acres in size, is leased to Cathedral Bluffs Shale Oil Company (Occidental Oil Shale Incorporated and Tenneco Shale Oil Company). Estimated reserves are 1.1 billion-barrels with eventual production targeted at 57,000 bbls/day.

2. Sodium, (Nahcolite and Dawsonite) Leasing

BLM has issued four sodium leases later consolidated into one lease, and has an additional four Preference Right Lease Applications pending, covering these minerals in the Piceance Creek Basin. The leases are within three miles of oil shale lease C-a, and about 10 miles from oil shale lease C-b. The lessee has conducted economic, mining, processing and market studies, and has filed a mining plan for development of the consolidated lease with the USGS, and also has applied to the Colorado Joint review process. However, no work is now being done on the currently leased lands. It has been determined that it will take 36

workmonths to write the EA on the four pending PRLAs which have met initial showing. Also it has been reported that Superior Oil Company will produce nahcolite and dawsonite in their private land oil shale development.

As the use of coal increases, the development of the nahcolite can be expected to increase because of its potential use as a stack scrubber in pollution control.

Since we currently import 90-95 percent of our aluminum, the development of dawsonite and other domestic sources of aluminum is expected to become critical. Indications are that foreign exporters are thinking strongly about taking the same line as the foreign oil producers have recently taken. Resulting price increases could accelerate the development of dawsonite.

3. Oil and Gas Leasing

There are 100 producing or potentially producing natural gas wells in the Piceance Basin. Rio Blanco Natural Gas and Sun Gas Corporation have applied to drill another 115 wells in the basin. One hundred wells are planned near the C-b lease, 15 wells are planned near the C-a lease. The entire Piceance Basin, with the exception of some small parcels, is under existing oil and gas leases.

Extraction of oil and gas is inconsistent with oil shale production from the same lands. The existence of both operations on those lands create several health, safety and resource recovery problems. Oil and gas leases issued in the basin have given priority to oil shale development for several years, however, an unknown number of older leases still exist which do not address the resource conflict. This resource conflict should be addressed in future decisionmaking resulting from the oil shale program through the programmatic and the following Resource Management Plans.

4. State Indemnity Selection Application

The State of Colorado has selected 6,840 acres of high value oil shale lands near federal lease tract C-b as indemnity for school lands not received. The lands upon which the state has based its claim are of much lower value than the selected lands, and some are not mineral in character as required by law. These issues remain to be resolved prior to a conveyance of these indemnity lands to the state.

The status of this land is further clouded by a lawsuit between the state and Occidental Petroleum Company, which filed state mining claims on the land immediately after the state made its selection known.

In the event this land is conveyed to the state, relatively rapid development can be expected with requests for access, product pipelines and power being the principal concerns, which would need environmental analysis.

5. Exchange Proposals

Getty Oil Company, Exxon Coal Company, Superior Oil Company and Chevron Oil Company all have exchange proposals pending or under discussion on oil shale lands in the Piceance Basin. The Exxon and Superior proposals both suffer from wide disparity in values between the offered and selected lands. An environmental impact statement was completed on the Superior Exchange. That exchange was rejected based upon the value disparity, that decison is now on appeal.

We have not begun the environmental analysis for the Exxon, Getty or Chevron proposals. All may involve the development of associated facilities, such as power lines, roads and water projects on surrounding public lands if the exchange is completed.

6. Other Land Transfers

Considerable discussion has taken place between the town of Rangely and the BLM in Colorado with respect to the need of the town for public land for expansion because of energy developments and related growth. A proposal is actively under consideration at this time.

7. Major Pipeline Projects

a. La Sal Shale Oil pipeline; Parachute, Colorado to Casper, Wyoming; this pipeline is a part of the Colony project, but has been rerouted and the ES on the new route is underway.

b. Chevron Oil Company has just recently started discussions of two pipelines from their two projects in Colorado to the Salt Lake City area.

c. Exxon is considering a pipeline from Piceance Creek Basin to facilities in Texas.

8. Other Federal Involvements

Several developments in Colorado involve either Department of Energy (DOE) or Synfuel money, or some other type of cooperative arrangement with the U. S. Government.

a. Equity Oil Company - is conducting steam injection tests for oil shale recovery.

b. Multi-Minerals Corporation - (MMC) cooperative agreement to operate Bureau of Mines (BOM) Horse Draw Research Facility for "Saline Zone" mining and geotechnical research, recovery of nahcolite and dawsonite, as well as shale oil.

c. Multi-Mineral Corporation has signed an agreement with Industrial Resources Incorporated so that MMC acquires a sodium lease, C-0118326, near the Horse Draw Facility, intended recovery of nahcolite and dawsonite and associated shale oil.

d. Paraho Development Corporation, along with 17 other companies and Development Engineering Incorporated, is the operator of the BOM Anvil Points Research Facility near Rifle, Colorado, includes DOE funding grants.

e. TRW project on Naval Oil Shale Reserves #1 and #3, Gulf Research and Development Company, TOSCO Corporation, C. F. Braun and Company, and Kaiser Engineers, full resource appraisal and an optimized shale oil production system.

f. Other recent developments include DOE selection of Colony project and Union Oil project for possible awards of synthetic fuels loan guarantees and Texaco Incorporated has joined the Paraho project. The Department of Energy is considering leasing the Naval Oil Shale reserves.

II. Actions to Facilitate Development

A. Private Development of Oil Shale in Colorado

1. Background

There are six private oil shale developments in the Piceance Basin in various stages of planning which will probably need additional authorizations for the use of public lands in order to fully develop their projects. The details of each project vary. However, due to the land ownership pattern in the Basin, each of the projects will, we believe, have to seek authorization for ancillary facilities from the Bureau of Land Management. These ancillary facilities will be mine and plant facilities, roads, water projects, product pipelines, and power lines.

An example of an existing private development which has completed planning and received authorizations to proceed from BLM is the Colony Development Operation (TOSCO and Exxon) project. The Environmental Impact Statement for that development included consideration of a product pipeline, mine, plant facilities, power lines, water supply, a land exchange and new town.

2. Purpose

The obvious purpose of private oil shale development is to allow this synthetic fuel to take its place in the total energy picture in the United States. Also the purpose is to allow the integration of private and federal resource developments and to allow the orderly and logical development of the total resource.

3. Current Status

Superior Oil Company, Union Oil Company, Occidental Oil Shale, Chevron Oil Shale Company (2 projects), and Mobil Oil Company all have plans in development. The Chevron project involves a mine, 100,000 barrel-per-day production facility with associated water, power, road and product pipeline rights-of-way from BLM. Chevron is also interested in the acquisition of some isolated parcels of BLM land. The company intends to apply for the rights-of-way next month with a target construction date of May, 1983. Other details are as follows:

a. Colony Development Operation (TOSCO Corporation and Exxon Company, U.S.A.) owns approximately 9,000 acres, with estimated reserves of 1 billion barrels. Production is targeted at 47,000 barrels-per-day by 1985.

b. Union Oil Company owns some 19,000 acres, with eventual production targeted at 50,000-per-day. Reserves are estimated at 1.3 billion barrels.

c. Superior Oil Company currently owns approximately 8,000 acres, and has plans for exchange with other private land owners to facilitate development. Production is targeted at 50,000 bbls/day.

d. Occidental Oil Shale Incorporated (Logan Wash area) owns approximately 4,300 acres of fee land. Six retorts have been fired (modified in situ process) and two more are planned for 1981-82. Total production so far has been approximately 94,500 barrels; an additional 58,000 barrels are expected from the two additional retort burns planned. Reserves are estimated at 750 million barrels.

e. Chevron Oil Shale Company (Standard Oil Company of California) owns some 43,000 acres in two separate areas of Garfield County, Colorado. Eventual production is targeted at 50,000 barrels-per-day.

f. Mobil Oil Company's project, approximately 10 miles west of Rifle, Colorado, envisions a mine capacity eventually at a rate of 150,000 tons-per-day, which is expected to support an ultimate retort capacity of 100,000 barrels-per-day, achieving a production rate of 50,000 barrels-per-day by 1990.

4. Relationships to Federal Oil Shale Leasing

With these projects under development, and if mineral patents are issued involving some 255,000 acres (65,000 + 190,000 acres), industry requirements for additional federally-owned oil shale resources are not well defined. Our proposal for inquiry of industry as to its needs in two areas (1) ancillary-type facilities, rights-of-way, exchanges, land transfers and plant sites, and (2) multimineral-type development leasing would solve this question and allow for the logical and orderly integration of federal activities with private developments. Again it is emphasized that the success of oil shale development is based on cooperative, orderly development.

5. Recommended Action

It is recommended that we proceed with the approval of the facilitating-type projects so that these projects can be initiated timely and developed in an orderly fashion.

B. Additional Leasing Under the Prototype Program

1. Background

The prototype oil shale leasing program was begun in 1973 after preparation of a comprehensive EIS that analyzed the impacts of leasing up to 6 tracts of public oil shale lands (2 each in Colorado, Utah and Wyoming). This EIS also included the regional environmental impacts of oil shale development at a rate of 1,000,000 barrels-per-day by 1985. Thus, the document considers the specific impacts of prototype development on public lands in the perspective of a mature regional oil shale industry.

2. Purpose

The goals of the federal prototype program were essentially to: (1) stimulate the development of oil shale technology by private industry in a manner that would assure minimum environmental impact; and (2) develop management expertise in the leasing and supervision of oil shale resource development.

3. Current Status

At this time, only the two prototype tracts in Colorado are under development. The tracts in Utah have been in litigation and no bids were received on the 2 Wyoming tracts. Additional interest has been expressed by industry and the State of Colorado in multimineral development.

4. Recommended Action - Consider Only One or Two Tracts For Multimineral Leasing

a. The existing land use plan in the White River area identifies several tracts as acceptable for oil shale development. If leasing was limited to those tracts, no additional planning would be required. Any call for nominations from industry could be limited to indications of interest in those previously identified tracts.

b. A supplement to the existing 1973 prototype leasing EIS would be required. This supplement would address the specific impacts of leasing 1 or 2 additional tracts for multimineral development, as well as update the regional and cumulative impacts of a mature oil shale industry. In order to most accurately and efficiently address cumulative impacts, industry should be requested to advise us of any proposals requiring the use of public lands (pipelines, exchanges, etc.). If proposals were at a fairly definitive stage, they could be

addressed site-specifically in this EIS so that no further detailed environmental analysis would be required. Thus, we would have an EIS that accomplished 3 needs: (1) assessed the impacts of 1 or 2 multi-mineral tracts; (2) assessed the impacts of known ancillary facilities requiring the use of public lands; and (3) updated the analysis of the regional and cumulative impacts of a mature oil shale industry.

C. Development of a Permanent Federal Oil Shale Management Program

1. Background

Prior to undertaking any major federal action with significant impacts on the human environment, the Department must meet its responsibilities under the National Environmental Policy Act (NEPA) of 1969. The decision to undertake a Federal Oil Shale Leasing Program is a major federal action with potentially significant impacts. Therefore, a programmatic EIS must be prepared.

2. Purpose

An EIS on a Federal Oil Shale Leasing Program should address 4 major questions: (1) Should a Federal Oil Shale Leasing Program be adopted by the Department of Interior? (2) How should the program be designed? (3) Is oil shale leasing necessary to meet the nation's future energy needs?, and (4) What environmental impacts might result from the adoption of alternative federal oil shale leasing programs? The impacts of a Federal Oil Shale Leasing Program and its alternatives should be analyzed and result in a broad statement of overall impacts of the program which will allow the Department to make decisions concerning national and multi-regional questions.

3. Current Status

No steps have been taken to initiate this phase of the program at this time.

4. Recommended Action

Proceed with development of a Programmatic EIS, including draft regulations. This would enable the Department to fulfill its NEPA responsibilities and have the structure for an oil shale program in-place if it is decided that federal leasing is appropriate. Work could be initiated on the Programmatic EIS at the same time steps are taken to expand the prototype program.

D. Implementation of a Permanent Federal Oil Shale Program

1. Background

Oil shale management for implementing the permanent program will be accomplished through the Bureau's Land Use Planning Process. Resource allocations and land use decisions will be contained in the

plan for all pertinent area resources, such as oil shale. There will not be an additional level of planning for each resource activity following the Land Use Plan. The output or product of the Resource Management Plan for oil shale will be leases. Plans will be prepared on a resource area basis, or combination, and will address regional benefits and impacts of leasing. In addition, the Land Use Plans or Amendments will discuss the support facilities needed, such as rights-of-way, access, transportation, utility corridors, storage areas, etc., as well as new oil shale proposals.

Private enterprise will be encouraged to be an active participant in the land use planning and decision process. To date, industry has been a strong endorser of this philosophy, e.g., Chevron, Arco, Exxon.

2. Purpose

To provide for large-scale management of more tracts in the oil shale region on a permanent long-term basis. This would enable a more positive business climate for application of technologies, economic stability (to a heretofore "experimental" industry), long-term business and government commitment to oil shale management and increased prosperity and stability to the local economy.

3. Current Status

At present, no permanent management of the federal program for oil shale has been developed or implemented. Many discussions and briefings have gone on within the agency, and expectations are being raised among industry and state/local governments, but no decision has yet been reached within the Department. The State of Colorado, local governments in the area, and industry support a phased approach to implement a permanent management program for oil shale because it would offer maximum benefits and maximum consideration of impacts (see views of state and local governments' page). Most disagree on the time frame and scope of implementing such a long-term program.

4. Recommended Action

The Options available to implement a permanent oil shale management program in Colorado are:

a. Amend the existing Land Use Plans for the White River and Grand Junction Resource Areas. The former is the primary federal leasing area, while the latter will contain many of the ancillary facilities needed by private industry. Also, preparation of an EIS would be required (a combined EIS or one document could be prepared for both amendments). This option could be completed in late FY 83. This would allow for an integration of private and federal management of the oil shale program.

b. Complete the Land Use Plans for the White River and Grand Junction Resource Areas as presently scheduled, 1986/8. This would allow the oil shale program to be treated as every other resource program. This approach would enable a full assessment of benefits and impacts for oil shale and all other resources. The regional EIS would be prepared for all resource actions as an integrated component of the Land Use Plan. This approach saves the Bureau from having to do many functional EISs for all the individual resource activity decisions, i.e., grazing, oil and gas, etc. This option allows for the oil shale management program to become completely integrated in all multiple-use management decisions.

c. Other options, such as acceleration of a Resource Management Plan(s) are possible, however, we do not recommend that as a viable or needed option at this time.

We recommend Option (b). It would seem to satisfy the concerns of the state, local government, and industry for an orderly development of oil shale. It would also provide for the complete management of oil shale. The Regional Oil Shale Team would be an integral part of either option.

5. Summary

We have the capability to manage the oil shale program through our Land Use Planning Process. The management of the program must be immediately responsive to industry, state and local government, as well as the multiple-use management of Bureau lands. We have these capabilities operating and are ready to initiate an oil shale management program. (See Appendices 1 through 3.)

III. Additional Management Requirements Necessary to Implement a Total Oil Shale Management Program

A. Legislative

There are several concerns which will require changes in the Mineral Leasing Act: the acreage limitation on the size of oil shale leases (5120 presently) should be changed and we would recommend a concept based on estimated recoverable resources; a negotiated leasing authority is needed to allow the total recovery of a deposit where only small portions of a deposit are federally owned; joint leasing authority might have some usefulness in other states; the limit of one lease per entity needs to be changed, again so that a total deposit may be mined; and finally, the off-lease overburden and spent shale disposal question must eventually be resolved, perhaps through new legislation which has been introduced in Congress, but in any event, section 701(d) of FLPMA must be repealed; off-lease facility siting may be resolved by the use of section 302 of FLPMA leases, but, if not, some authority for such facilities must be made.

B. Regulatory

Present regulations 43 CFR 3500 make little mention of oil shale leasing and, at a minimum, would have to be brought up to date.

C. Procedural

A definite policy in relation to evaluation procedures is needed, particularly with respect to exchanges. Existing evaluation methodology is not adequate, perhaps some oil shale resource estimate in terms of barrels-per-ton could be used.

Appendix 1

OIL SHALE MANAGEMENT PROGRAM FOR COLORADO
Implementation of Permanent Oil Shale Management Program

Completion Date CY	Product	Private	State	Local	Federal	Regional Oil Shale Team
1982	Prototype leases and issuance of right-of-ways, etc., for private development (include call for interest to industry).	◒	◒	◒	●	◒
1982	Development of permanent oil shale program including programmatic EIS, regulations, BLM policy.	◒	◒	◒	●	◒
1986/88	Land use planning/EIS (White River and Grand Junction Resource Areas)	◒	◒	◒	●	◒
	Federal leasing under permanent program.	◒	◒	◒	●	◒
1984	Production of private oil shale begins (Colony, etc). La Sal Pipeline completed.	●	◒	◒	◒	◒
1984 and beyond	Monitoring of oil shale management program.	●	●	●	●	◒

● - Lead
◒ - Cooperating or Supporting

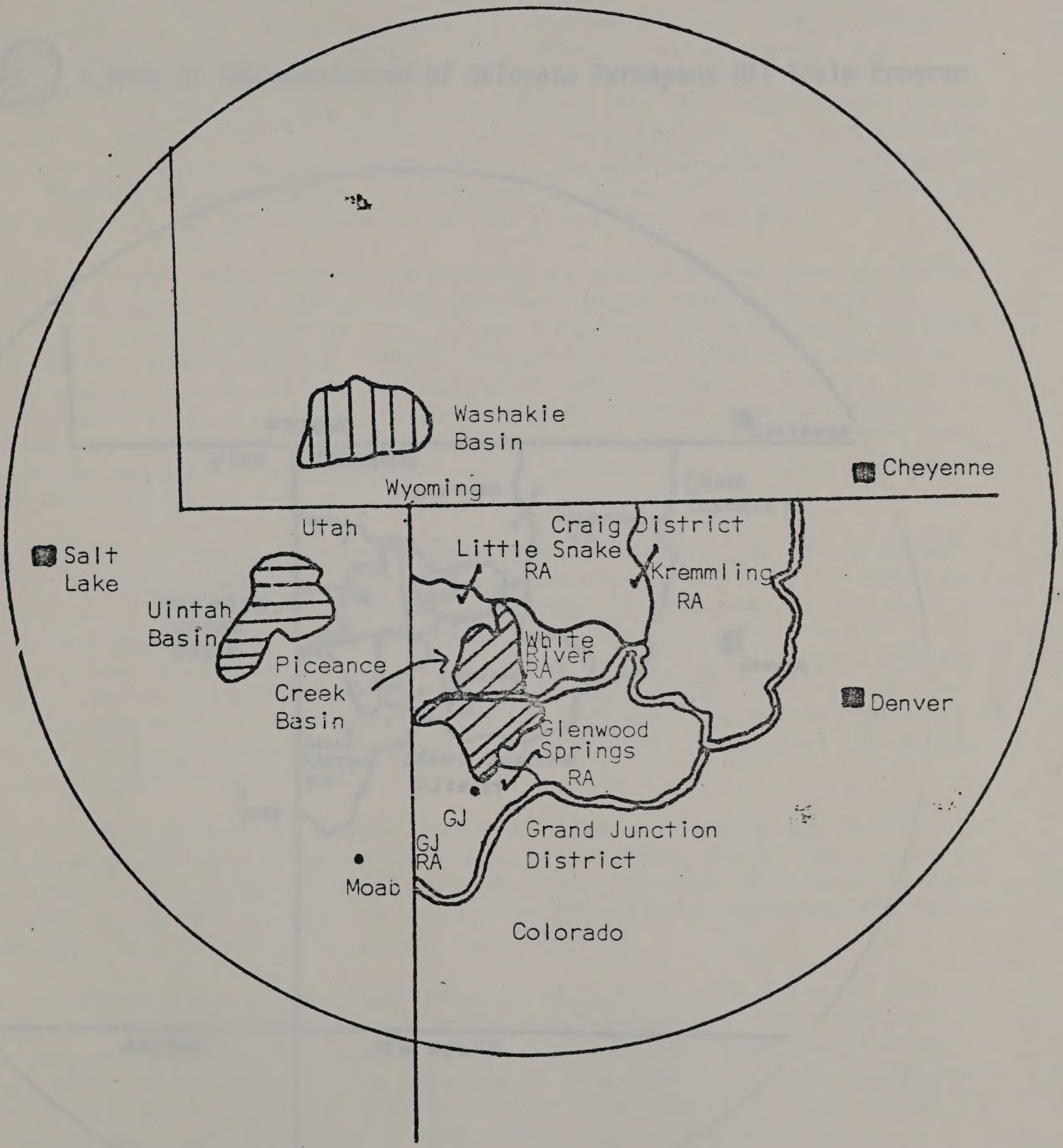
Appendix 2

Diagrammatic of Overall Oil Shale Management Program

Phase I	→	Phase II	→	Phase III
Regional ES		National ES		Resource Mgmt Plan/EIS
1981 → A. Multi-mineral use (1 or 2 tracts).	→	National programmatic on permanent oil shale program.	→	Major federal leasing.
B. Call for interest from industry on ancillary facilities requirements.				Ancillary facilities for private development.

Appendix 3

THE OIL SHALE REGION

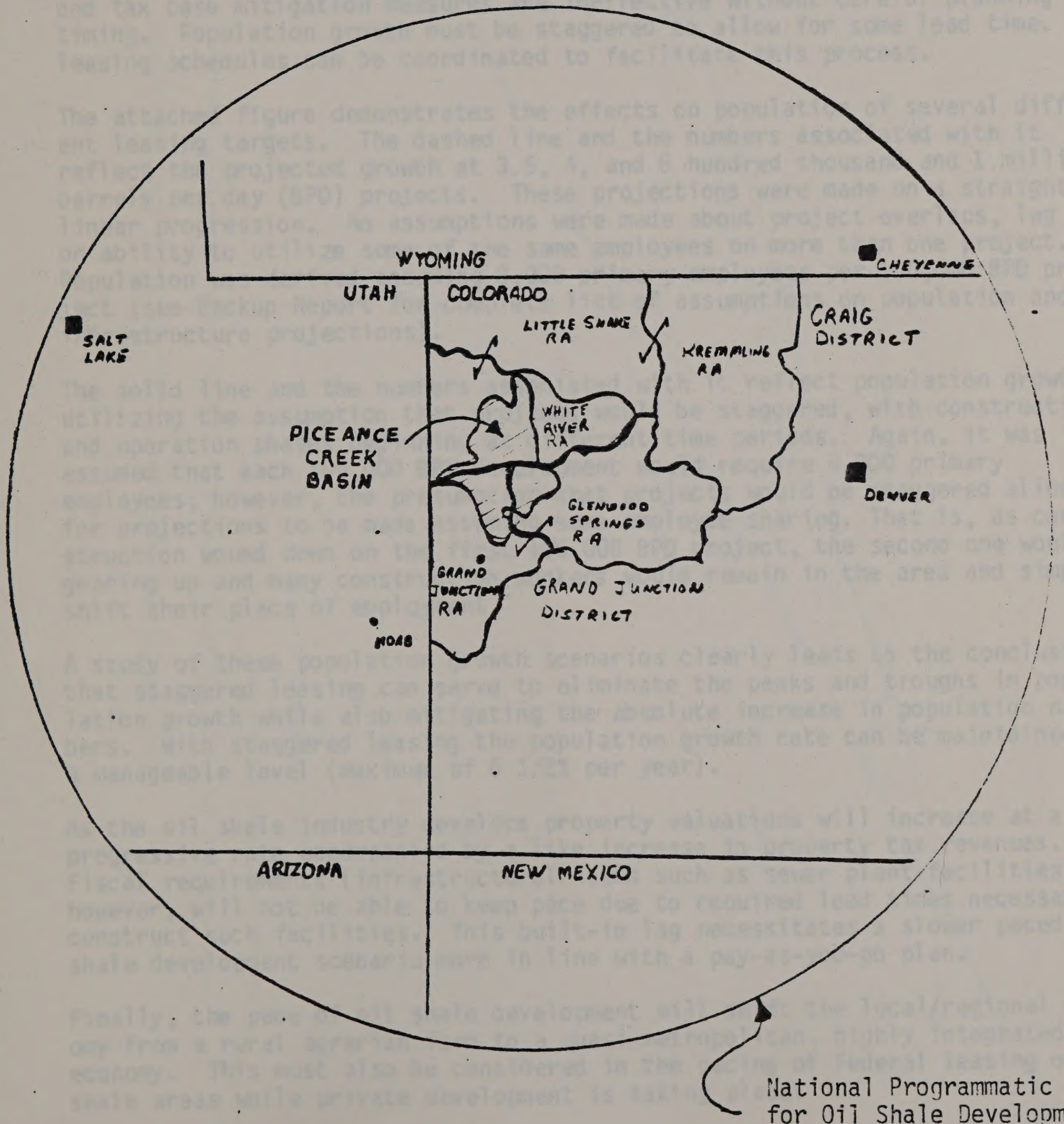


▨ Area of Implementation of Oil Shale Program

Appendix 3

IMPLEMENTATION OF PERMANENT OIL SHALE MANAGEMENT PROGRAM

▨ - Area of Implementation of Colorado Permanent Oil Shale Program



National Programmatic Region for Oil Shale Development

Appendix 4

Social and Economic Study

The social and economic considerations of oil shale development evolve from, (1) the magnitude and intensity of population growth, (2) the change in tax revenues generated, (3) fiscal expenditure requirements for orderly infrastructural needs and, (4) the change in the economic structure of local/regional communities. Large increases in the absolute numbers of people within short time frames allow little opportunity for the economic and social structures of communities to prepare or effectively respond. Infrastructural and tax base mitigation measures are ineffective without careful planning and timing. Population growth must be staggered to allow for some lead time. BLM leasing schedules can be coordinated to facilitate this process.

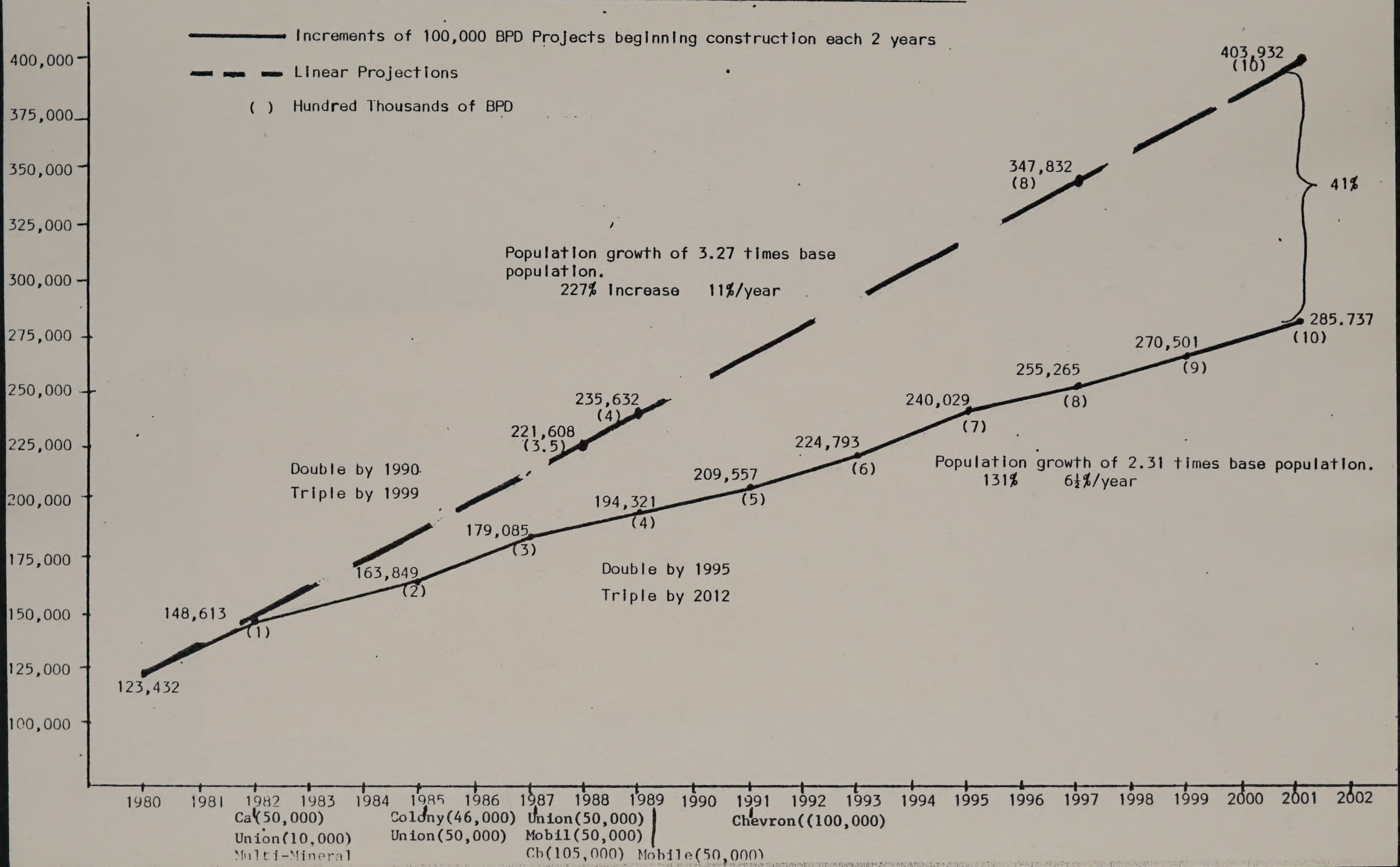
The attached figure demonstrates the effects on population of several different leasing targets. The dashed line and the numbers associated with it reflect the projected growth at 3.5, 4, and 8 hundred thousand and 1 million barrels per day (BPD) projects. These projections were made on a straight linear progression. No assumptions were made about project overlaps, lag time or ability to utilize some of the same employees on more than one project. Population was derived assuming 8,000 primary employees per 100,000 BPD project (see Backup Report for complete list of assumptions on population and infrastructure projections).

The solid line and the numbers associated with it reflect population growth utilizing the assumption that projects would be staggered, with construction and operation phases beginning at different time periods. Again, it was assumed that each 100,000 BPD development would require 8,000 primary employees; however, the presumption that projects would be staggered allowed for projections to be made assuming some employee sharing. That is, as construction wound down on the first 100,000 BPD project, the second one would be gearing up and many construction workers would remain in the area and simply shift their place of employment.

A study of these population growth scenarios clearly leads to the conclusion that staggered leasing can serve to eliminate the peaks and troughs in population growth while also mitigating the absolute increase in population numbers. With staggered leasing the population growth rate can be maintained at a manageable level (maximum of 6 1/2% per year).

As the oil shale industry develops property valuations will increase at a progressive rate accompanied by a like increase in property tax revenues. Fiscal requirements (infrastructural items such as sewer plant facilities) however, will not be able to keep pace due to required lead times necessary to construct such facilities. This built-in lag necessitates a slower paced oil shale development scenario more in line with a pay-as-you-go plan.

Finally, the pace of oil shale development will shift the local/regional economy from a rural agrarian form to a quasi-metropolitan, highly integrated economy. This must also be considered in the pacing of Federal leasing of oil shale areas while private development is taking place.



Peak Population Projections by Year Due to Oil Shale Development